What is claimed is:

1. An optical connector face end machining apparatus comprising:

an operation circuit box having a drive motor and a battery and serving as a grasping section;

a planetary gear mechanism box including a drive mechanism that rotatably retains a polishing table on a polishing table retainer and permits rotation from the drive motor to be delivered to the polishing table retainer through a planetary gear mechanism; and

a chuck mounting section fixedly secured to the planetary gear mechanism section,

wherein the chuck mounting section includes a chuck that allows a ferrule to be guided with respect to the polishing table for a sliding capability in a vertical direction, and a pressure-applying mechanism that causes the ferrule to be vertically held in pressured contact with the polishing table.

2. The optical connector face end machining apparatus of claim 1, wherein the chuck mounting section is fixedly secured to the planetary gear mechanism box by means of two columns.

3. The optical connector face end machining apparatus of claim 1, wherein the polishing table is made of resilient deformable material, and a polishing film is provided on a surface, opposing to the ferrule, of the polishing table.

4. The optical connector face end machining apparatus of claims 1, 2 or 3, wherein the polishing table retainer is supported to be able to revolve and rotate on a surface, opposing to an end face, to be processed, of the ferrule through a rotating mechanism with respect to the planetary

gear mechanism box.

5. The optical connector face end machining apparatus of claim 1, wherein the drive mechanism rotates and revolves the polishing table and the polishing table retainer on a surface, opposing to an end face, to be processed, of the ferrule.

6. The optical connector face end machining apparatus of claim 5, wherein the drive mechanism further includes:

a central shaft standing upright in a frame;

a sun gear fixedly secured to the central shaft;

a rotary bearing gear rotatably attached to the central shaft;

a rotary bearing unitarily formed with the rotary bearing gear;

a stationary shaft disposed on the rotary bearing;

a first planetary gear rotatably attached to the stationary shaft and meshing with the sun gear;

a second planetary gear unitarily formed with the polishing table retainer and meshing with the first planetary gear; and

a second planetary gear shaft on which the second planetary gear is rotatably supported and supported on the rotary bearing via an arm;

wherein the presence of a difference in gear teeth between the sun gear and the second planetary gear allows the second planetary gear, the polishing table retainer and the polishing table to rotate and revolve about a center of the central shaft.

7. The optical connector face end machining apparatus of claim 5, wherein the drive mechanism further includes:

a central shaft standing upright in a frame;

a sun gear fixedly secured to the central axis;

a rotary bearing gear rotatably attached to the central

shaft;

a rotary bearing unitarily formed with the rotary bearing gear;

a stationary shaft disposed on the rotary bearing;

a first planetary gear rotatably attached to the stationary shaft and meshing with the sun gear;

a second planetary gear unitarily formed with the polishing table retainer and meshing with the first planetary gear; and

a second planetary gear shaft on which the second planetary gear is rotatably supported and supported on the rotary bearing via an arm;

wherein the sun gear and the second planetary gear are set to have the same gear teeth whereby the second planetary gear, the polishing table retainer and the polishing table revolve about a center of the central shaft.

8. The optical connector face end machining apparatus of claims 6 or 7, wherein a compression spring is disposed between the second planetary gear shaft and the polishing table retainer for urging the polishing table toward the rotating mechanism.

9. The optical connector face end machining apparatus of claims 1, 2, 3, 4, 5, 6, 7 or 8, wherein the pressure-applying mechanism includes a guide hook in which a flange of the ferrule is fixedly secured to a guide shaft standing upright in the chuck section, a pressure adjusting screw is disposed on an upper end of the guide shaft in which a compression spring is compressed between the pressure adjusting screw and the guide hook.

10. A method of machining an end face of an optical connector formed of a cylindrical ferrule with a diameter of approximately 1.25mm or 2.5mm or with a diameter in proportionate thereto, the method comprising:

bonding step applying an adhesive to a circumferential periphery of a fiber at an area except for an end face to be processed and permitting the fiber to be inserted to the ferrule and bonded thereto into the ferrule;

cutting step cutting an excessive fiber protruding from an end face of the fiber;

forming step forming a convex spherical surface on the end face of the fiber; and

finishing step finishing the end face of the fiber,

wherein the cutting step, forming step and finishing step are carried out with the optical connector end face machining apparatus defined in Claims 1, 2, 3, 4, 5, 6, 7 or 8.

11. The optical connector face end machining apparatus of claims 6 or 7, wherein a counter-weight is disposed on the rotary bearing.

12. The optical connector face end machining apparatus of claims 5 or 6, wherein a distance between an axis of a central shaft and an axis of the second planetary gear shaft is equal to a radius of a revolving motion of the polishing table.

13. The optical connector face end machining apparatus of claim 1, wherein a magnet is disposed on a surface opposing to the polishing table retainer of the polishing table, and the polishing table retainer is made of metal.

14. The optical connector face end machining apparatus of claim 1, wherein the polishing table retainer includes a pin fixedly secured to the polishing table retainer and standing upright toward a direction opposing the polishing table, the pin is configured to engage with an engaging portion formed on a surface opposing to the polishing table retainer of the polishing table.